

said substrate holder having,

a groove section in a portion where said substrate holder contacts said substrate when said substrate holder is holding said substrate,

a porous member which can allow air to pass through provided within said groove section in which the surface of the porous member is at a same level as the surface of substrate holder, and

a through-hole which connects said groove section to the portion where said substrate holder does not contact said substrate when said substrate holder is holding said substrate.

73. (Twice Amended) A substrate holder which holds thereon a substrate as an object for film formation in an optical disk substrate film-formation apparatus, said substrate holder comprising:

a groove section which extends from a portion where said substrate holder contacts said substrate when said substrate holder is holding said substrate to a portion where said substrate holder does not contact said substrate when said substrate holder is holding said substrate; and

a porous member which can allow air to pass through provided within said groove section in which the surface of the porous member is at a same level as the surface of substrate holder.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-30, 33-42 and 73 are pending in the present application with Claims 1, 6, 11, 15, 19 and 73 having been amended by the present amendment.

In the outstanding Office Action, a copy of the Information Disclosure Statement filed with the application was requested; Claims 1, 11 and 12 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano; Claims 2, 13 and 14 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano and Hiyamizu et al; Claims 3, 15-22 and 73 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano, Hiyamizu et al and Aoyama et al; Claim 4 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano and Tamura et al; Claim 5 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano and Tateishi et al; Claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano and Ueda et al; Claim 7 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano, Ueda et al and Hiyamizu et al; Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano, Ueda et al and Aoyama et al; Claim 9 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano, Ueda et al and Tamura et al; Claim 10 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kataoka et al in view of Itano, Ueda et al and Tateishi et al; and Claims 23-30 and 33-42 were allowed.

Applicants thank the Examiner for the indication of allowable subject matter.

Enclosed is a copy of the IDS filed with the application as requested by the outstanding Office Action.

Independent Claims 1, 6 and 11 have been amended to include subject matter similar to that as recited in Claim 4. For example, Claim 1 is directed to an optical disk substrate film-formation apparatus which manufactures an optical disk by forming a thin film on the surface of a substrate. The apparatus includes a substrate holder which fixes the substrate during the formation of the film. The substrate holder includes a contact holding surface

contacting at least a portion of a rear surface of a film-formed area of the substrate on which the film is formed, and a vacuum chuck section for adsorbing and fixing the contact holding surface to the substrate. The substrate holder also includes a removal claw having an inclined section configured to go into a section between a rear surface of the substrate and a top surface of the substrate holder to mechanically peel off the adsorbed substrate from the substrate holder.

In a non-limiting example, Figure 5 illustrates a claw section 40 for peeling off the optical disk substrate 1 in which the claw section 40 has an inclined section 40a which goes into a section between a rear surface of the optical disk substrate 1 and a top surface of the holder section 3, and functions to mechanically peel off the optical disk substrate 1 from the contact support surface S'. Because of this feature, a robot for removing an optical disk substrate can suck the optical disk substrate 1 with a relatively weak sucking force (see page 30, lines 10 and 11 and page 31, lines 2-8).

With the configuration as described above, it is possible to weaken the sucking force sufficiently adsorbing the optical disk substrate 1 during film formation in the removal step, and even when a thinner optical disk substrate 1 is used, it is possible to prevent the optical disk substrate from being broken in the removal step (see page 31, lines 9-14).

Regarding the subject matter recited in Claim 4, the outstanding Office Action indicates the secondary reference Tamura et al teaches a pusher 19 for inserting and removing the substrate from a substrate holder and cites column 14, lines 46-50. However, as shown in Figure 3 of Tamura et al, the pusher 19 does not have an inclined section configured to go into a section between a rear surface of the substrate and a top surface of the substrate holder to mechanically peel off the absorbed substrate from the substrate holder, but rather has a rounded end surface which pushes the substrate 1 from the bottom.

Further, it is respectfully submitted the additional publications applied in the outstanding Office Action also do not teach or suggest the claimed removal claw. Accordingly, it is respectfully submitted independent Claims 1, 6 and 11 and each of the claims depending therefrom are also allowable.

In addition, independent Claims 15, 19 and 73 have been amended to recite that the porous member which can allow air to pass through is provided within the groove section in which the surface of the porous member is at a same level as the surface of the substrate holder. Independent Claims 15 and 73 also recite that the groove section extends from a portion where the substrate holder contacts the substrate when the substrate holder is holding the substrate to a portion where the substrate holder does not contact the substrate when the substrate holder is holding the substrate.

Regarding independent Claims 15 and 73, in a non-limiting example, Figure 13 is a general flat view showing a substrate holder 301, a substrate 302 and a center hole section 303. Also shown is a porous section 304 and a groove section 305. Figure 14 is a partial view showing a general cross-section of the substrate holder 301 and the substrate 302 set in the substrate holder 301 (see page 44, lines 16-24).

The groove section 305 is provided in the substrate holder 301, and the gas-permeable porous member 304 is provided in the groove section 305. The groove section 305 extends from inside of an area where the substrate holder 305 contacts a substrate 302 to an area in which the substrate holder 305 does not contact the substrate, and the porous member 304 has an area where the member contacts the substrate 302 and an area in which the member is exposed in a space in a vacuum vessel. Further, a surface of the porous member 304 is at the same level as a surface of the substrate holder 301 (see page 45, lines 4-14).

Regarding the subject matter recited in Claims 15 and 73, the outstanding Office Action indicates Aoyama et al teach in Figures 1 and 2 the claimed groove section.

However, as noted in the outstanding Office Action, the wafer vacuum holding surface of wafer holder WH is formed into a circular shape of a diameter which is slightly smaller than the diameter of a wafer W. Thus, the groove section cannot extend from a portion where the substrate holder contacts the substrate when the substrate holder is holding the substrate to a portion where the substrate holder does not contact the substrate when the substrate holder is holding the substrate. Further, the grooves in Aoyama et al do not have a porous member disposed therein in which the surface of the porous member is at the same level as the surface of the substrate holder. It is respectfully submitted the additional references applied in the outstanding Office Action also do not teach or suggest the claimed features.

Accordingly, it is respectfully submitted independent Claims 15 and 73 and each of the claims depending therefrom are also allowable.

Similar arguments apply to Claim 19 as that discussed above with respect to Claim 15, except Claim 19 recites that the groove section is in a portion where the substrate holder contacts the substrate when the substrate holder is holding the substrate (Claim 19 does not recite that the groove section extends from a portion where the substrate holder contacts the substrate when the substrate holder is holding the substrate to a portion where the substrate holder does not contact the substrate when the substrate holder is holding the substrate). Claim 19 does recite the porous member which allows air to pass through being provided within the groove section in which the surface of the porous member is at the same level as the surface of the substrate holder. As discussed above, the applied references do not teach or suggest this feature.

Accordingly, it is respectfully submitted independent Claim 19 and each of the claims depending therefrom are also allowable.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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Docket No. 0557-4909-3

IN RE APPLICATION OF: Kazunori ITO ET AL.

SERIAL NO: 09/498,375

FILED: FEBRUARY 4, 2000

FOR: OPTICAL DEVICE SUBSTRATE FILM-FORMATION APPARATUS, OPTICAL DISK SUBSTRATE FILM-FORMATION METHOD, SUBSTRATE HOLDER MANUFACTURE METHOD, SUBSTRATE HOLDER, OPTICAL DISK AND A PHASE-CHANGE RECORDING TYPE OF OPTICAL DISK

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Transmitted herewith is an amendment in the above-identified application.

☒ No additional fee is required

☐ Small entity status of this application under 37 C.F.R. §1.9 and §1.27 is claimed.

☒ Additional documents filed herewith: Marked-up Copy of Amendment, Letter to the Official Draftsman, Formal Drawings (38 sheets), Copy of Information Disclosure Statement and PTO Form 1449

The Fee has been calculated as shown below:

CLAIMS	CLAIMS REMAINING		HIGHEST NUMBER PREVIOUSLY PAID	NO. EXTRA CLAIMS	RATE	CALCULATIONS
TOTAL	41	MINUS	80	0	x \$18 =	\$0.00
INDEPENDENT	8	MINUS	19	0	x \$84 =	\$0.00
		<input type="checkbox"/> MULTIPLE DEPENDENT CLAIMS			+ \$280 =	\$0.00
		TOTAL OF ABOVE CALCULATIONS				\$0.00
		<input type="checkbox"/> Reduction by 50% for filing by Small Entity				\$0.00
		<input type="checkbox"/> Recordation of Assignment			+ \$40 =	\$0.00
		TOTAL				\$0.00

☐ A check in the amount of \$0.00 is attached.

☒ Please charge any additional Fees for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

☒ If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time may be charged to Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

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